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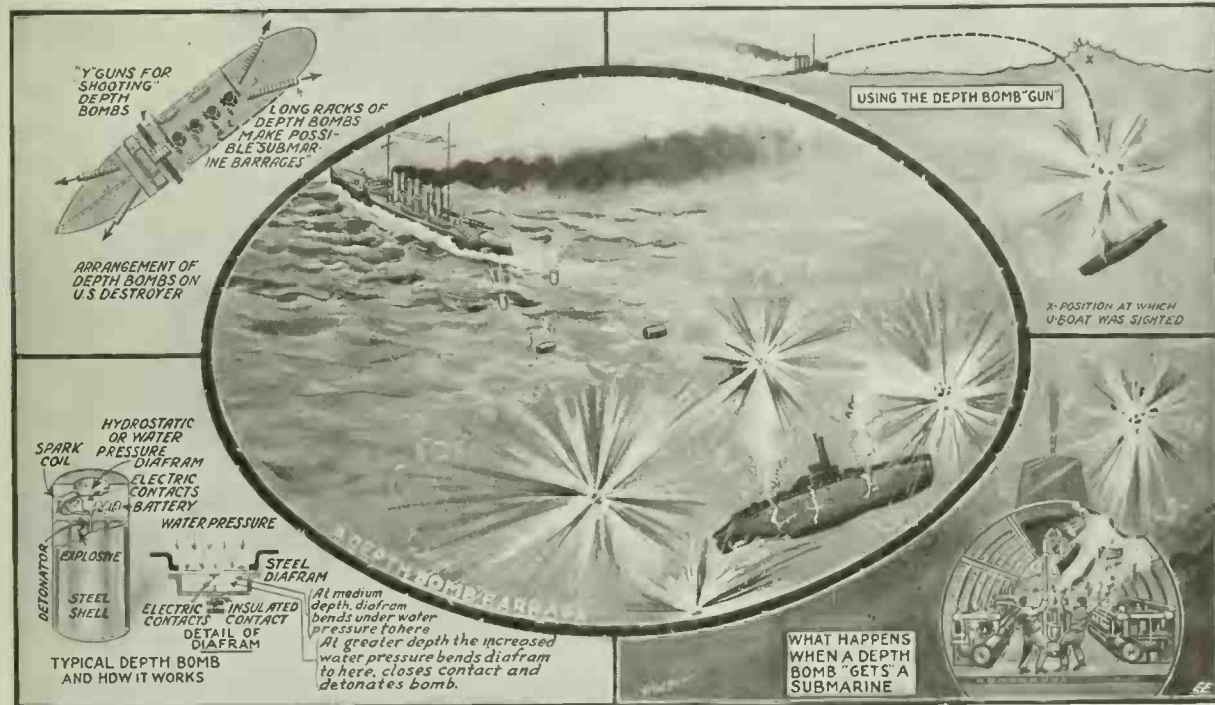
Number 9

American Destroyers Throw "Depth Bomb Barrage"

AN American destroyer, with her depth bombs ready to be discharged, is a dangerous craft. Running without lights in the darkness she is a menace not only to the enemy but to herself and other ships should a collision occur.

The arrangement of the American destroyer's depth bomb armament that struck terror into the heart of German submarine commanders is shown in the accompanying illustration. These depth charges are dangerous to a submarine, even if they are 500 to 1200 feet away from the

square inch for every foot of head or depth. Thus for 1 foot depth the hydrostatic pressure acting on the shell, and also the diafram, would be .433 lb. for every sq. in. of surface area. For a depth of 20 ft. the water-pressure per sq. in. would be 8.6 lb.; for 50 ft. depth, 21.6 lb., and



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U. S. Destroyers Have Greatly Profited By Actual War Experience, for They Became So Proficient in the Use of the "Depth Bomb"—a Wonderful New Weapon in Itself—That They Could Set Up a Veritable "Sub-aqueous Barrage." Also They Can "Shoot" Depth Bombs for a Distance of One-half Mile or More. Unlike Shells They Do Not Ricochet or Slip, But Penetrate the Water to a Certain Depth and Then Explode.

The bombs are now released from every quarter of the destroyer. Two can be dropped from the bridge by pressure of a button; "Y guns," amidships, with two barrels, can throw bombs to port or starboard; astern there are two long lines of bombs running on miniature railway tracks, so a complete barrage may be fired at any

point where the subaqueous explosion occurs.

The detail view herewith of one of these depth bombs shows clearly the principle upon which they operate. The steel tank container is a simple affair, fitted with a sensitive water-pressure diafram. The pressure of the water increases .433 lb. per

for 100 ft. depth, 43.3 lb. per sq. in. Hence it is clear how it becomes possible to "set" the diafram of the detonating device, whether electrical or mechanical, to trip off the latter at any desired depth. The farther the contact pin, or trip finger, is set back or away from the diafram, the greater the water-pressure or depth required to press it in that far.

AND NOW THE ELECTRICIAN-ETTE!

We have conductorettes, female bartenders, police women, elevator operators, usherettes and farmerettes, but this is the first instance of its kind where we are having an electricianette.

Mrs. Ada B. Vail of the Atlantic City Electric Company, Atlantic City, New Jersey, has complete charge of an installation of sixty-five electric ranges in one apartment house located at the above address. She is responsible for the proper maintenance and operation of the entire equipment of these stoves and handles her position capably. Beside, she takes care of some thirty-five odd electric stoves throughout the city. In all, she supervises one hundred of these intricate electrical devices.

Her entire tool kit can be summed up into a testing lamp, screw driver and two pair of pliers, one large and one small. Compare this neat and compact equipment that most certainly reflects the characteristics of a woman as

its owner, with the modest (?) tool chest of the male species of electrician and the carrying of a large assortment of unnecessary junk, approximating one-half ton in weight, and when he finds that the job will require a screw driver one-sixteenth of an inch smaller in size, we would be asking too much if we should expect him to use one of the next size. Instead he takes an afternoon's vacation on your time, going to the movies or to Coney Island, or Kalamazoo, as far as we know, and by the length of time that he consumes to get this tool.

Can you imagine upon arising from your warm bed on a cold Winter morning, making a quick dash to the electric stove in the

sitting room, turning on the switch, and in anticipation of the warmth that you are to get, you find the electric stove is as cold as a chunk of ice. The heat of your indignations warms you thoroly, and you make

attired young lady, in *overalls*. Taken back with this surprise, you ask her what she desires. "Oh, Sir," says she, "I am the electrician! You sent a call for me, and I am here to repair your heater." Her

intention is very agreeable to you, and with military precision she brushes past you, takes off the top of the heater, yanks out the heating elements, mutters a monosyllable that sounds like "burnt out," inserts a new unit, attaches another fuse, turns the switch, and the job is finished. It has taken her exactly ten minutes, and the most incredible part of it, when you ask her the charges, and receive a reply, "Oh, that is all right, sir, I am paid by the firm that owns the building." She goes out closing the door very gently, and without even looking for a tip.

Cheer up, fellows, it will be a great old world after the fair sex take our jobs. We will have nothing to worry about except washing the dishes and scrubbing the floor.



Photo Courtesy Edison Electric Illuminating Co. of Boston

Yes, the "Electricianettes" Are Here! The Present Photo Shows Them Hard at Work at One of the Dynamo Switch-Boards of the Boston Edison Company

one grand dive for the telephone. After you have stood there for about a half hour with your teeth chattering, waiting for the telephone boy in the hall below to answer your call, you are finally rewarded for your patience by being allowed the honor to speak with the janitor. After you have told him what you thought of him and his entire family, back to his great, great grandfather, he very sweetly answers with a roar like the Kaiser; and tells you that your need will be attended to.

Within a few seconds you hear a short staccato knock upon the door, and upon opening it you are almost stricken speechless by the appearance of a very neat and chivalry

WORLD RADIO SYSTEM URGED FOR SOCIALISTS.

Active steps are being taken by the International Socialist movement to establish a private system of wireless throughout the world. Five installations are now definitely projected. Stations will be immediately set up in England, France, Belgium and ultimately in other countries, including America.

Three of the new stations will link up with the German and possibly the Russian Socialist wireless. They will be used to connect Socialist organs in various countries.

In collision there is no danger of the shock exploding the bomb, but some might be thrown into the water and explode when at the proper depth.

And this is not all of the Depth Bomb's story, either. Did you ever hear of the depth bomb "gun"? It shoots depth bombs accurately for a distance of half a mile or more. The merchant ships that dodged the U-boats were equip with such guns, which operate with compressed air, similar to the well-known torpedo tube. The illustration shows how the depth bomb gun is sighted to drop the bomb just at the point where it will complete its trajectory thru the water and explode near the enemy submarine, which has submerged and is sneaking off, or trying to.

Imagine also the effect of a subaqueous barrage on the enemy subsea fighters. Talk about land barrage fire! The water transmits the noise and vibrations from the exploding depth bomb many times better than

in the air. Cases have been known where a submarine's plates have been dented in and the seams started at a distance of nearly one-half mile. The concussive wave transmitted thru the water is exceedingly powerful because, for one reason, water is practically incompressible.

Remembering that stores of mutinies in the German naval ports first gave clear intimations that Germany's military machine was breaking down, it is not surprising that the revolutionary movement first should have assumed serious form among the sailors. And according to the current reports, the terrible hardships and the ghastly number of fatalities among the U-boat crews are what started the final fatal break in discipline and morale.

It can be said, therefore, with some approximation to truth, that not only did unrestricted undersea warfare hasten and make certain the defeat of Germany by bringing into the war the American land

and water forces needed to turn the scale against her, but it was the thing which, working from the other side, added speed to the downfall of the Kaiser's hopes and his empire. The fears and the despairs which the submarines could not create in the minds of the Allies they did create in those of the men who had been ordered to commit the atrocious crimes by which the world was shocked.

They did what they were told to do, but the task proved too much for even their docility, and they rebelled against it at last, not, however, so far as any evidence yet presented has shown, because of indignation against the orders received, but because the execution of those orders so often meant for them the fate of drowning rats. Too many of the U-boats that went out did not return, and the mystery of their fate was intolerable to the survivors.

BACK NUMBERS!—Many readers desire to obtain back numbers of this Journal. We have a limited quantity of these back issues on hand and can supply them at the following rates:—Back numbers of The Electrical Experimenter not over three months old, 15 cents each; over three months old, 20 cents each; over one year old, 35 cents each.